

REQUEST FOR RECONSIDERATION

Claims 1-20 remain active in this application.

The claimed invention is directed to an aqueous hair cleansing composition.

Applicants wish to thank examiner Channavajjala for the helpful and courteous discussion held with their U.S. representative on May 27, 2008. At that time, applicants' U.S. representative argued that the cited references disclosed no affect on foaming performance from using a peaked ether sulfate and therefore there would have been no expectation of the improved foaming speed demonstrated by applicants by selection of the sulfate alkoxylation distribution as claimed. The following is intended to expand upon the discussion with the examiner.

Aqueous hair cleansing compositions based on alkyl sulfate surfactants have been used based on their high detergency and foaming volume. While alkyl sulfate surfactants have some drawbacks in terms of causing hair friction, polyoxyethylene alkyl ether surfactants have become popular based upon good feel but typically exhibit reduced foaming properties. Accordingly, alkyl ether surfactants having good foaming properties are sought.

The claimed invention addresses this problem by providing a hair cleansing composition comprising an alkyl ether sulfate surfactant comprising 30-45 wt.% of the sulfate of formula 1 where $n=0$, 18-27 wt.% of the sulfate where $n=1$, and 10-20 wt.% of the sulfate where $n=2$, the balance where n is 3 or greater and **the sum of sulfates where $n=0-2$ is 70 wt.% or greater**. Applicants have discovered that such a distribution of alkyl ether sulfate surfactants provides for good foaming properties in a hair cleansing composition.

As evidence of the improved foaming speed and lubricity resulting from the claimed invention, the examiner's attention is again directed to the data appearing in Table 2, page 18 of the specification. For the examiner's convenience, a portion of the data is reproduced below.

Table 2

Component (wt.%)	Examples												Comparative Examples			
	1	2	3	4	5	6	7	8	1	2	3	4				
Sulfate 1	10	15			10	12										
Sulfate 2			10	8												
Sulfate 3							12	15								
Comparative Sulfate 1									15							
Comparative Sulfate 2										10						
Comparative Sulfate 3											15	12				
Laurylamidopropyl betaine				2							2					
Myristyl alcohol	1	1	1		1	1	1	1	1	1		1				
Ethylene glycol distearate			2	2	2	3	3	3		2	2	3				
Distearyl ether		2							2							
Behenyl alcohol	2		2		2					2						
Cationic hydroxyethyl cellulose	0.5		0.3		0.3	0.2	0.2	0.3		0.3		0.2				
Cationic guar gum		0.5	0.2	0.5	0.2	0.3	0.3		0.5	0.2	0.5	0.3				
Amino-modified silicone						0.1	0.1					0.1				
Dimethicone (gum viscosity: 8 million mm2/s, average particle size; 0.5 μm)						1.2	1.2	0.5				1.2				
Malic acid	0.75	0.75	0.75	0.75	0.03	0.75	0.75	0.75	0.75	0.03	0.75	0.75				
Sodium chloride						0.2						0.2				
Purified water	Balanc e	Balanc e	Balanc e	Balanc e	Balanc e	Balanc e	Balanc e	Balanc e	Balanc e	Balanc e	Balanc e	Balanc e				
pH (when diluted to 20 times the weight with water, 25°C)	3.7	3.7	3.7	3.7	5.5	3.7	3.7	3.7	3.7	5.5	3.7	3.7				
Foaming speed	A	A	A	A	A	A	A	A	B	B	D	D				
Lubricity of foam	18	18	20	18	19	20	20	19	15	9	7	10				
Luster and manageability	19	20	20	18	15	20	20	20	18	6	18	18				

None of Comparative Examples 1-4, using comparative sulfates 1-3, meet the claim limitation 70 wt.% or greater of n=0-2 sulfates. Comparative sulfates 1-3 have an amount of n=0-2 sulfate ranging from 51.99 to 69.47%, amounts which are **less than 70 wt.%**. In each of these examples, the foaming speed was **greater than 100 seconds**.

In contrast, examples 1-8 using sulfates 1-3 in which the amount of n=0-2 sulfate ranged from 72.29 to 77.73 wt.%, concentrations which exceed 70 wt.% all had a foaming speed of **less than 100 seconds**. Furthermore, the foams were judged at a high assessment of lubricity and luster and manageability. Thus, by selection of the distribution of the ethoxylation of an alkyl ether sulfate, applicants are able to obtain high foaming speed. Such a result in a hair cleansing composition is nowhere suggested in the cited prior art of record.

During the discussion with the examiner, the examiner noted that the foaming speed was not a claim limitation. Applicants note that it is not necessary for the claims to recite a foaming speed as a compound and its properties are inseparable.

From the standpoint of patent law, a compound and all of its properties are inseparable. *In re Papesch*, 315 F.2d 381, 391, 137 USPQ 43, 51, (CCPA 1963) MPEP 2141.02(V)

The rejection of claims 1-20 under the grounds of non-statutory obviousness-type double patenting over claims 1-17 of U.S. 6,914,038 in view of EP 190,010 (EP '010), Cox (*JAOCs*) and U.S. 6,133,212 is obviated by the enclosed terminal disclaimer disclaiming the terminal portion of any patent issuing from the above-identified application which would extend beyond the full statutory term of U.S. 6,914,038.

Applicants also disclaim the terminal portion of any patent issuing from the above-identified application which would extend beyond the full statutory term of U.S. 7,307,050 as discussed in applicants' response of January 10, 2008.

In addition, applicants note that Terazaki et al. U.S. 6,914,038 and the above-identified application are each assigned to Kao Corporation, Tokyo Japan and therefore were commonly owned at the time of the invention of the above-identified application.

The rejection of claims 1-20 under 35 U.S.C. § 103(a) over U.S. 6,914,038 in view of EP '010 and Cox JAOCs and Elliott et al. is respectfully traversed.

Applicants note that Terazaki et al. was filed with the U.S. patent office on January 8, 2003. Further applicants note that Terazaki et al. has a corresponding publication US 2003/0162675 published August 28, 2003. Each of these dates are prior to applicants' U.S. filing date of December 9, 2003. However, each of these dates are after applicants' Japanese priority date of December 10, 2002. In order to perfect applicants' claim to priority, applicants enclose herewith a certified English language translation of applicants' Japanese priority document JP 2002-357796. A certified copy of JP 2002-357796 was submitted on December 9, 2003. Applicants respectfully request the full benefit of priority to applicants' priority application. As U.S. 6,914,038 was not filed with the U.S. patent office until January 8, 2003, after applicants' Japanese priority date and since U.S. 2003/0162675 was published after applicants' Japanese priority date, this patent and corresponding U.S. publication are not available as prior art against the claimed application. As the primary reference is not available as prior art against the claimed invention, withdrawal of the rejection of claims 1-20 under 35 U.S.C. § 103(a) over U.S. 6,914,038 in view of EP '010 and Cox JAOCs and Elliott et al. is respectfully requested.

The rejection of claims 1-20 under 35 U.S.C. § 103(a) over a combination of EP '010 and Cox JAOCs and Elliott et al. is respectfully traversed.

None of the cited references disclose or suggest a distribution of ethoxylated sulfate surfactant where at least 70 wt. % is $n=0-2$ nor that such a distribution would yield a composition with a faster foaming speed.

Each of EP '010 and Elliott et al U.S. 6,133,212 have been cited to suggest the claimed features of ethoxylation and an ethoxylation distribution as claimed.

Neither reference suggests the claimed ethoxylation distribution or the claim limitation of an amount of ethoxylation where $n=0-2$ of at least 70 wt. %.

Elliott et al. describes at column 4, lines 26-30, a narrow range of ethoxylated alkyl sulphates having **from 1 to about 6**, preferably **from about 2 to 4**, and especially **about 3 moles** of ethylene oxide. The narrow range is described as improving skin mildness and product lather (column 4, lines 23-26). While the reference describes a goal of producing a foam which is stable and of high quality (column 1, lines 52-61) the reference reports the discovery of a composition which is mild and has beneficial rinsing characteristics (column 2, lines 7-11). There is no suggestion of increased foaming speed when the concentration of $n=0-2$ sulfate is at least 70 wt. %.

EP '010 merely describes a shampoo composition comprising a synthetic anionic surfactant of an alkyl sulfate or an ethylene oxide extended alkyl ether sulfate where the number of ethylene oxide units range from 1-10 (page 3, lines 20-25). Preferred compositions have an average degree of ethoxylation of from about 1-4 (page 4, lines 7-8) and specific examples contain 3-30 wt.% of sulfates where $n=0$, 45-90 wt.% of sulfates where $n=1-4$, 10-25 wt.% of sulfates where $n=4-8$ and 0.1-15 wt.% of sulfates where n is greater than 8 (page 4, lines 11-17). The reference is deficient in

suggesting at least 70 wt.% of $n=0-2$ sulfate. In fact, by describing 10-25 wt.% of $n=4-8$ and 0.1-15 wt. % of $n > 8$, the reference suggests that it is possible to have at least 40 wt. % of ethoxylated sulfate where n is 4 or greater. Providing for an amount 40 wt. % of ethoxylated sulfate where n is 4 or greater fails to suggest ensuring an amount of sulfate of at least 70 wt. % where $n=0-2$.

The examiner has cited to Cox asserting motivation to use a “peaked” sulfate as such would be expected to increase skin mildness, would have greater solubility and improved performance of detergency.

Applicants respectfully submit that Cox provides no expectation of improved skin mildness, solubility or detergency for an ethoxylated **sulfate** as claimed.

Applicants note that Cox describes a discussion of “peaked” ethoxylates and ether sulfates and not a distribution of an alkyl ether sulfate surfactant comprising **30-45 wt.%** of the sulfate of formula 1 where $n=0$, 18-27 wt.% of the sulfate where $n=1$, and 10-20 wt.% of the sulfate where $n=2$, the balance where n is 3 or greater and the sum of sulfates where $n=0-2$ is 70 wt.% or greater. It is clear that “peaked” does not include 30-45 wt. % of non-ethoxylated sulfate, as Cox identifies peaking as reducing **three key** groups of homologs, **the free alcohol**, low-mol homologs and high-mol homologs. As the compound of formula I where $n=0$ corresponds with the very free alcohol Cox is reducing, there is no suggestion of the claimed sulfate distribution having 30-45 wt. % of sulfated free alcohol.

Page 7 of the official action suggest that there would be motivation to use a peaked sulfate based on an expectation of increased skin mildness. However, since increase skin mildness is achieved in the substantial absence of free alcohol sulfate

(page 603, left column, last paragraph), such an expectation would not be created for a composition having 30-45 wt. % of sulfated free alcohol.

On page 8 of the official action, the examiner suggests greater solubility and improved performance of detergency when the ethylene oxide content is optimized, citing the disclosure on pages 600-601. Applicants note that the paragraph bridging pages 600-601 describes the behavior of ethoxylated **alcohols** and not ethoxylated **sulfates** as claimed. Further, the described improved solubility, advantageous when preparing a liquid laundry detergent, is achieved through the reduced concentration of low-mol alcohol homologs. Such an advantage is irrelevant to a composition comprising 30-45 wt. % of sulfated free alcohol and having at least 70 wt. % of sulfates where $n=0-2$ (e.g low mol sulfates). As the described advantages of peaked ethoxylates flow from the reduction of free alcohol and reduction of low-mol alcohols, such advantages are not suggested for a composition having 30-45 wt. % of sulfated free alcohol and at least 70 wt. % of sulfates where $n=0-2$. For at least these reasons, Cox fails to suggest the claimed sulfate distribution.

Even further, Cox suggests that there would be no great affect on detergency or foam performance by using a peaked sulfate. (page 603, right column). Accordingly, there would be no suggestion that the claimed sulfate distribution would exhibit improved foaming speed. The direct observation that peaking did not greatly affect foaming performance would preclude any expectation of improved foaming speed resulting from the claimed sulfate distribution.

In addition, applicants have already provided the evidence of an unexpected improvement in **foaming speed** through selection of a polyoxyethylene alkyl ether sulfate distribution as claimed.

As the references fail to disclose or suggest the claim limitation of at least 70 wt.% of all sulfates being $n=0-2$, the claimed invention is clearly not rendered obvious from the references and accordingly, withdrawal of the rejection under 35 U.S.C. 103(a) is respectfully requested.

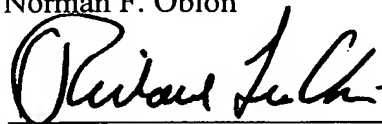
The provisional rejection of claims 1-20 for non-statutory obviousness-type double patenting over claims 1-7 of co-pending application 11/313,740, now U.S. 7,307,050 is obviated by the enclosed terminal disclaimer disclaiming the terminal portion of any patent issuing from the above-identified application which would extend beyond the full statutory term of U.S. 7,307,050.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

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DECLARATION

I, Kaori SHINODA of c/o The Patent Corporate Body ARUGA PATENT OFFICE, 3-6, Nihonbashiningyocho 1-chome, Chuo-ku, Tokyo 103-0013 Japan do solemnly and sincerely declare that I well understand both Japanese and English languages and that I believe the attached English version is a true and complete translation of the Japanese Patent Application No. 2002-357796 filed on December 10, 2008 in the name of Kao Corporation.

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